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ABSTRACT

This report contains an analysis of selected multiple characteristics of nursing students with academic performance. A questionnaire was used to obtain information concerning family background, socio-economic background, educational experiences prior to entering and during enrollment at the University of Virginia, use of leisure time, educational interests, nursing interests, opinions toward nursing practice and selected achievement data. A regression approach was used to identify a reliable predictive measure of academic performance by students in the School of Nursing at the University of Virginia. (Author)

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ANALYSIS OF BACHELOR DEGREE RECIPIENTS IN THE SCHOOL OF NURSING, UNIVERSITY OF VIRGINIA, 1970: A SECOND REPORT

by

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ANALYSIS OF BACHELOR DEGREE RECIPIENTS IN THE SCHOOL OF NURSING, UNIVERSITY OF VIRGINIA, 1970: A SECOND REPORT

The Office of Institutional Analysis submitted a report to the Dean of the School of Nursing in June 1970, entitled, "Analysis of Bachelor Degree Recipients in the School of Nursing, University of Virginia, 1969." The report examined relationships of selected multiple characteristics of nursing students with academic performance. At the request of the Dean of the School of Nursing the study was replicated for the June and August nursing graduates in 1970. The specific objectives of this second report remained the same as related in the previous study. These objectives were:

1. What is the history or profile of selected academic achievement of the nursing students prior to enrollment and during enrollment in the School of Nursing at the University of Virginia?
2. How do selected multiple factors relate to academic performance of nursing students at the University of Virginia?
3. What factors provide a reliable predictive measure of academic performance of students in the School of Nursing at the University of Virginia?

PROCEDURES

The students selected for the study included 123 B.S.N. degree recipients from the School of Nursing during June and August of 1970.

A questionnaire was used to ascertain information concerning family background, socio-economic background, educational experiences prior to entering and during enrollment at the University of Virginia, use of leisure time, educational interests, nursing interests, and opinions toward nursing practice. Selected achievement information was obtained from the records of the nursing graduates. These data were the same types as studied in the first report.

The statistical designs used to answer the aforementioned objectives or questions included: (1) descriptive statistics to present an achievement profile and overall profile of the nursing graduates, and (2) a multivariate form of applied multiple linear regression analysis as developed by Bottenberg and Ward.[1] The regression routine attempted to account for the nursing students' cum GPA at the time of graduation as completely as possible by using a combination of predictors chosen from the recorded information of each nursing student.

FINDINGS

A. DESCRIPTIVE STATISTICS OF SELECTED BEHAVIORS.

An achievement profile on selected indices of the nursing graduates is presented in Table 1.

Rank in Graduating High School Class. The average percentile rank in graduating high school class for 112 of the nursing students was 75.81. This means that, on the average, these students graduated in the top quarter of their graduating high school class.

Scholastic Aptitude Test Achievement. The average scores for 100 of the nursing students on the SAT Verbal was 505.26, on the SAT Math was 499.10, and on the SAT Total it was 1004.36. This means that, on the average, the 100 nursing students achieved about the average total score on the SAT of all students taking the SAT examinations across the nation. (SAT Verbal and Math Mean = 500, SD = 100; SAT Total Mean = 1000, SD = 100)

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[1]Robert A. Bottenberg and Joe H. Ward, Jr., Applied Multiple Linear Regression, Technical Documentary Report PRL-TDR-63-6, 6570th Personnel Research Laboratory, Aerospace Medical Division, Air Force Systems Command, Lackland Air Force Base, Texas, March 1963.

Cum GPA and GPA in Science Courses at Time of Transfer to the University of Virginia. The mean cumulative grade point average (cum GPA) of 105 nursing graduates at the time of transfer to the University of Virginia was 2.61 (A=4.00). The mean cum GPA in science courses for 92 nursing graduates at the time of transfer to the University of Virginia was 2.55 (A=4.00).

Cum GPA Achievement at the University of Virginia. The mean cum GPA of the nursing graduates for the first semester first year enrolled was 2.61 (N=95), for the second semester first year it was 2.60 (N=95), for the first semester second year enrolled it was 2.87 (N=123), for the second semester second year enrolled it was 2.79 (N=123), and the mean cum GPA at time of graduation was 2.79 (N=123).

Dean's List. Seventy-nine (79) of the 123 nursing students had records which revealed that they had made the dean's list on the average of about two semesters during their program in the School of Nursing.

Probationary Status. Ten (10) nursing graduates had records of being placed on academic probation on the average of about one time during their nursing program.

Virginia State Board Nursing Examinations. The average scores recorded by the nursing graduates on the Virginia State Board Nursing Examinations were 515.12 in Medicine (N=108); 515.23 in Surgery (N=108); 517.23 in Obstetrics (N=108); 538.19 in Pediatrics (N=108); and 558.14 in Psychiatry (N=108).

National League for Nursing Examinations. The nursing graduates with scores recorded on the NLN examinations placed in the upper half of all nursing graduates in the country on Comprehensive Pharmacology (Mean = 58.15 PR, N=120), Maternal Child Health-A (Mean = 54.14 PR, N=119), Maternal Child Health-B (Mean = 60.54 PR, N=119), Maternal Child Health-C (Mean = 51.76 PR, N=119), Maternal Child Health-D (Mean = 57.53 PR, N=119), Psychiatric Nursing-A (Mean = 55.02 PR, N=117), Psychiatric

Nursing-B (Mean = 55.04 PR, N=117), Psychiatric Nursing-C (Mean = 56.01 PR, N=117), Comprehensive Medical-Surgical-B (Mean = 55.80 PR, N=122), Comprehensive Medical-Surgical-C (Mean = 56.42 PR, N=122), and Comprehensive Medical-Surgical-D (Mean = 61.37 PR, N=122).

The nursing graduates with scores recorded on the NLN examinations which were below the national percentile mean of 50 included Public Health Nursing-A, B, and C, and Comprehensive Medical-Surgical-A.

School of Nursing Achievement. The mean numerical grade equivalents (A=4, B=3, C=2, D=1) earned in nursing courses are reported in Table 1, page 8. The nursing students' average cum GPA on the theory grades given in 10 courses offered by the School of Nursing ranged from 2.26 (N=94) in Nursing 53-55 Theory to 3.14 (N=123) in Nursing 93-95 Theory. The clinical grades ranged from 2.72 (N=94) in Nursing 53-55 to 3.26 in Nursing 93-95 (N=123).

B. ANALYSIS OF ACADEMIC ACHIEVEMENT.

An applied multiple linear regression approach was used in an attempt to account for the variability of nursing students' cum GPA at the time of graduation. From a total of 378 vectors generated, 22 vectors were selected to give the best prediction of cum GPA at the time of graduation for the nursing students. As recorded in Table 2, the regression equation derived was:

$$Y_{\text{cum GPA}} = 82.22X_2 - 0.03X_5 + 0.03X_6 + 0.004X_7 - 0.002X_8 + 0.01X_{11} \ldots - 2.51X_{367} + 70.96$$

The multiple $R^2_{Y(2,\ 5,\ 6,\ \ldots\ 367)}$ gives the proportion of the variance of the criterion measure (cum GPA) attributable to the joint action of the selected independent variables X2, X5, X6, X7, . . . X367. The $R^2_{Y\ (2,\ 5,\ 6,\ 7,\ \ldots\ 367)}$ = .76; and therefore, 76% of whatever makes the nursing graduates differ in cum GPA

(Y) can be attributed to differences in their scores on R.N. Student Status -X2, size of high school graduating class -X5, percentile rank in high school graduating class -X6, SAT Verbal -X7, . . . sematic differential rating of nursing: professional - nonprofessional -X367. The remaining 24% of the variance of Y (cum GPA at time of graduation) must be attributable to factors not measured in the set of selected predictor variables.

The column entitled, "% of Variance" in Table 2 refers to the total amount of criterion variance associated with each of the independent or predictor variables. The two independent variables with the largest amounts of independent variance associated with Y (cum GPA at time of graduation) was R.N. Student Status, 34.81% and type of reading done in spare time - nonprofessional journals: Hobby magazines -X201 was 28.09%. The smallest amounts of independent variance associated with Y included percentile rank in graduating high school rank -X6, SAT Verbal -X7, and SAT Math -X8 - each contributed 0.01%.

The sum of the sole independent variance attributed to each of the 22 independent variables was 98.45%. The difference in the criterion variance accounted for by the intercorrelated action of the 22 independent variables (R^2 = 76%) and the criterion variance accounted for by each of the 22 independent variables individually (98.45%) indicates, to a degree, the large amount of overlap or intercorrelations among the 22 predictor variables independent of the criterion variable - Y. Thus, the total variance of the criterion is the sum of the criterion variance solely associated with each predictor variable and this shared variance.

The regression equation listed in Table 2 can be used to predict the 1970 nursing graduates cum GPA with a substantial reliability of .87 (R = .87).

The essence of the regression equation in Table 2 is simply that the 22

independent vectors or variables listed in Table 2 were selected from 377 independent vectors and account for 74% of the variability of academic achievement - cum GPA at the time of graduation of the nursing graduates in 1970. This equation can be used to predict the cum GPA of the nursing graduates in 1970 with a reliability of .87.

C. REGRESSION EQUATION TO PREDICT CUM GPA AT TIME OF GRADUATION FROM SELECTED ADMISSIONS DATA.

Listed in Table 3 is a regression equation based upon data recorded by the 1970 nursing graduates at the time of application for admission to the School of Nursing. The equation is:

$$Y \text{ cum GPA} = 49.44X_2 - .02X_5 + .03X_6 + .08X_7 \ldots + 3.12X_{357} + 125.16$$

This equation can be used to predict the cum GPA at the time of graduation from the University of Virginia for students applying for admission to the School of Nursing, assuming that the nature of applicants and experiences of the 1970 nursing graduates do not differ significantly from other applicants. The multiple R of the regression equation was 0.72, which indicates the maximum correlation between actual cum GPA's and predicted cum GPA's at the time of graduation of the 1970 nursing graduates.

The R^2 of the equation was 0.52 which means that 52% of the criterion variance, cum GPA at time of graduation, may be accounted for by the set of 14 independent or predictor variables. The largest independent contribution of criterion variance was accounted for by preference of long unbroken study periods -X302 as compared to short periods of study preferred. The amount of variance for X302 was 18.49%. The smallest amount of independent variance with the criterion variable was accounted for by percentile rank in graduating high school class -X6 (.04%).

The difference in the independent contributions of the criterion variance

accounted for by the 14 predictor variables (88.11%) was different from the criterion variance which can be accounted for by the intercorrelated contributions of the joint actions of the 14 predictor variables (76%, see Table 2, $R^2 = .76$). This difference indicates that the 14 predictor variables have more in common among themselves than the total association of each of the 14 predictor variables with the criterion variable.

D. PROFILE OF SELECTED CHARACTERISTICS OF NURSING GRADUATES, UNIVERSITY OF VIRGINIA, 1970.

A list of selected characteristics of nursing graduates from the University of Virginia in 1970 are distributed in Table 4. The first column contains the variable number; this is followed by a description of the variable and the number of nursing graduates with data available and recorded on files. The last two columns contain listings for per cents if the variable listed was a frequency count and means if the variable was a number, test score, and the like. For example, the first variable listed should read - variable number 2; this connotes the RN students of which there were 28 in the population and constituted 22.76% of the 1970 nursing graduates. Variable number 5 is defined as size of graduating high school class. There were 122 nursing graduates with these data available, and the average high school graduating class size for the 122 students was 281.11.

Table 4 is presented to be studied by the faculty and administration of the School of Nursing at the University of Virginia in order to modify and strengthen additional studies on their nursing graduates.

TABLE 1
MEANS OF SELECTED ACHIEVEMENT CHARACTERISTICS OF GRADUATES, SCHOOL OF NURSING, UNIVERSITY OF VIRGINIA, 1970

Variable Number	CHARACTERISTIC	N	Mean
A. Achievement			
6	%ile Rank in Graduating High School Class	112	75.81
7	SAT VERBAL	100	505.26
8	SAT MATH	100	499.10
9	SAT TOTAL	100	1004.36
10	Cum GPA At Time of Transfer to U. Va.	105	2.61
11	Cum GPA In Science Courses/Time of Transfer to U. of Va.	92	2.55
13	U. Va. Cum GPA at Graduation	123	2.79
14	U. Va. Cum GPA 1st Year/ 1st Semester	95	2.61
15	U. Va. Cum GPA 1st Year/ 2nd Semester	95	2.60
16	U. Va. Cum GPA 2nd Year/ 1st Semester	123	2.87
17	U. Va. Cum GPA 2nd Year/ 2nd Semester	123	2.79
18	Dean's List, Number of Times	79	2.23
19	Probation, Number of Times	10	1.20
40	Va. State Boards - Medicine	108	515.12
41	- Surgery	108	515.23
42	- O. B.	108	517.23
43	- Pediatrics	108	538.19
44	- Psychiatry	108	558.14
45	NLN, I - Comprehensive Pharmacology	120	58.15
46	NLN, II - Public Health Nursing A	120	41.00
47	- Public Health Nursing B	120	41.18
48	- Public Health Nursing C	120	40.63

TABLE 1 (continued)

Variable Number	CHARACTERISTIC		N	Mean
A.	Achievement			
49	NLN, III - MCH, A		119	54.14
50	- MCH, B		119	60.54
51	- MCH, C		119	51.76
52	- MCH, D		119	57.53
53	NLN, IV - Psychiatric Nursing A		117	55.02
54	- Psychiatric Nursing B		117	55.04
55	- Psychiatric Nursing C		117	56.01
56	NLN, V --Comp. Med. - Surg. A		122	43.33
57	B		122	55.80
58	C		122	56.42
59	D		122	61.37
60	NURS 51 : Dynamics of Human Relations:	Theory	94	2.66
61	NURS 53-55: Nursing Needs of Adults and Children:	Theory	94	2.26
62	:	Clinical	94	2.72
63	NURS 60 : Interpersonal Relations in Nursing:	Theory	96	2.60
64	NURS 62-64: Nursing Needs of Adults and Children:	Theory	94	2.34
65	:	Clinical	93	2.97
66	NURS 81 : Nursing Needs of the Adult with Complex Medical-Surgical Problems:	Theory	122	2.78
67	:	Clinical	122	2.84

TABLE 1 (continued)

Variable Number	CHARACTERISTIC		N	Mean
A. Achievement				
68	NURS 83 : Nursing Needs of Patients with Emotional Problems:	Theory	122	2.48
69	:	Clinical	122	2.80
70	NURS 85 : Nursing Needs of Child-Bearing and Child-Rearing Families with Complex Problems:	Theory	122	2.51
71	:	Clinical	122	2.74
72	NURS 89 : Nursing Needs of the Community:	Theory	122	2.52
73	:	Clinical	122	3.23
74	NURS 91 : Leadership in Nursing Practice:	Theory	123	2.79
75	:	Clinical	123	3.25
76	NURS 93-95: Independent Study and Electives:	Theory	123	3.14
77	:	Clinical	123	3.26

TABLE 2
ANALYSIS OF ACADEMIC ACHIEVEMENT OF NURSING GRADUATES,
SCHOOL OF NURSING, UNIVERSITY OF VIRGINIA, 1970

Variable Number	Variable	Regression Coefficient	Beta Weight	% of Variance
2	R. N. Status	82.22	0.59	34.81
5	Size of High School Graduating Class	-0.03	-0.08	0.64
6	%ile Rank in Graduating High School Class	0.03	0.01	0.01
7	SAT Verbal	0.004	0.01	0.01
8	SAT Math	-0.002	-0.01	0.01
11	Cum GPA at Time of Transfer to University of Va.	0.01	0.02	0.04
12	University of Va. Rank in Graduating Class	0.05	0.02	0.04
14	University of Va. GPA 1st Year/1st Semester	0.16	0.32	10.24
15	University of Va. GPA 1st Year/2nd Semester	0.09	0.18	3.24
16	University of Va. GPA 2nd Year/1st Semester	0.11	0.08	0.64
17	University of Va. GPA 2nd Year/2nd Semester	0.35	0.24	5.76
18	Dean's List, Number of Times	5.41	0.13	1.69
19	Probation, Number of Times	-27.98	-0.17	2.89
201	Type of Journals Read in Spare Time: Nonprofessional - Hobby Magazines	242.74	0.53	28.09
210	Type of Books Read in Spare Time: Fiction - Western	55.56	0.21	4.41
239	Not Familiar With Foreign Language	-4.66	-0.03	0.09
299	Academic Standing in High School Graduating Class	2.83	0.05	0.25
302	Preference for Long Unbroken Study Periods	-2.85	-0.02	0.04
303	Do Not Prefer Long Unbroken Study Periods	-22.02	-0.19	3.61
336	High School Teacher Helped Decide on Nursing Career	7.46	0.12	1.44
357	School of Nursing Location in Cosmopolitan Area Helped Application Decision	-3.36	-0.05	0.25
367	Semantic Differential Rating of Nursing Practice Professional - Nonprofessional	-2.51	-0.05	0.25

TABLE 2 (continued)

Variable Number	Variable	Regression Coefficient	Beta Weight	% of Variance
Y	Criterion - University of Va. Cum GPA	-	-	-
	Constant	70.96	-	-
Totals	R	.87		
	R^2	.76		
	F-Ratio	15.14		
	Level of Significance	.01		

TABLE 3
REGRESSION EQUATION FOR PREDICTING ACADEMIC SUCCESS OF NURSING GRADUATES FROM SELECTED ADMISSION DATA, SCHOOL OF NURSING, UNIVERSITY OF VIRGINIA, 1970

Variable Number	Variable	Regression Coefficient	Beta Weight	% of Variance
2	R.N.	49.44	0.36	12.96
5	Size of Graduating High School Class	-0.02	-0.06	0.36
6	%ile Rank in Graduating High School Class	0.03	0.02	0.04
7	SAT Verbal	0.08	0.30	0.90
8	SAT Math	-0.07	-0.24	5.76
11	Cum GPA at Time of Transfer	0.10	0.21	4.41
201	Type of Journals Read in Spare Time: Nonprofessional - Hobby Magazines	180.84	0.39	15.21
210	Type of Books Read in Spare Time: Fiction - Western	61.07	0.23	5.29
299	Academic Standing in High School Graduating Class	15.62	0.28	7.84
302	Preference for Long Unbroken Study Periods	51.09	0.43	18.49
303	Do Not Prefer Long Unbroken Study Periods	32.89	0.28	7.84
336	High School Teacher Helped Decide on Nursing Career	15.62	0.24	5.76
357	School of Nursing Location in Cosmopolitan Area Helped Application Decision	-10.18	-0.17	2.89
367	Semantic Differential Rating of Nursing Practice Professional - Nonprofessional	3.12	0.06	0.36
Y	Criterion - University of Va. Cum GPA	-	-	-
	Constant	125.16	-	-
Totals	R	.72		
	R^2	.52		
	F-Ratio	7.78		
	Level of Significance	.01		

TABLE 4
DESCRIPTIVE STATISTICS OF NURSING GRADUATES, SCHOOL OF NURSING,
UNIVERSITY OF VIRGINIA, 1970

Variable Number	Variable Description	N	Pct.	Mean Non-Zero	Rank Order
2	R. N. Student Status	28	22.76		
3	Generic Student Status	95	77.24		
4	College Credits Transferred to U. Va.	0	0.00	0.00	
5	Size of High School Graduating Class	122	99.19	281.11	
6	%ile Rank in Graduating High School Class	112	91.06	75.81	
7	SAT Verbal	100	81.30	505.26	
8	SAT Math	100	81.30	499.10	
9	SAT Total	100	81.30	1004.36	
10	GPA at Time of Transfer to U. Va.	105	85.37	2.61	
11	Cum GPA in Science Course/Time of Transfer	92	74.80	2.55	
12	U.Va. %ile Rank in Graduating Class	123	100.00	54.53	
13	U.Va. Cum GPA at Graduation	123	100.00	2.79	
14	U.Va. GPA 1st Year/1st Semester	95	77.24	2.61	
15	U.Va. GPA 1st Year/2nd Semester	95	77.24	2.60	
16	U.Va. GPA 2nd Year/1st Semester	123	100.00	2.87	
17	U.Va. GPA 2nd Year/2nd Semester	123	100.00	2.79	
18	Dean's List, Number of Times	79	64.23	2.23	
19	Probation, Number of Times	10	8.13	1.20	
20,40	Virginia State Boards - Taken: Medicine	108	87.80	515.12	
21,41	Surgery	108	87.80	515.23	
22,42	O.B.	108	87.80	517.23	
23,43	Pediatrics	108	87.80	538.19	
24,44	Psychiatry	108	87.80	558.14	
25,45	NLN I - taken - Comp. Pharm.	120	97.56	58.15	
26,46	NLN II " - P.H.N. - A	120	97.56	41.00	
27,47	- B	120	97.56	41.18	
28,48	- C	120	97.56	40.63	
29,49	NLN III - taken - MCH - A	119	96.75	54.14	
30,50	- B	119	96.75	60.54	
31,51	- C	119	96.75	51.76	
32,52	- D	119	96.75	57.53	
33,53	NLN IV - taken - Psy. Nurs. - A	117	95.12	55.02	
34,54	- B	117	95.12	55.04	
35,55	- C	117	95.12	56.01	
36,56	NLN V - taken - Comp. Med. Surg. - A	122	99.19	43.33	
37,57	- B	122	99.19	55.80	
38,58	- C	122	99.19	56.42	
39,59	- D	122	99.19	61.37	
60	Nursing 51 - Theory (A=4,B=3,...,F=0)	94	76.42	2.66	
61	53-55 - Theory	94	76.42	2.26	
62	Clinical	94	76.42	2.72	
63	60 - Theory	96	78.05	2.60	
64	62-64 - Theory	94	76.42	2.34	
65	Clinical	93	75.61	2.97	
66	81 - Theory	122	99.19	2.78	
67	Clinical	122	99.19	2.84	

TABLE 4 (continued)

Variable Number	Variable Description	N	Pct.	Mean Non-Zero	Rank Order
68	Nursing 83 - Theory	122	99.19	2.48	
69	Clinical	122	99.19	2.80	
70	85 - Theory	122	99.19	2.51	
71	Clinical	122	99.19	2.74	
72	89 - Theory	122	99.19	2.52	
73	Clinical	122	99.19	3.23	
74	91 - Theory	123	100.00	2.79	
75	Clinical	123	100.00	3.25	
76	93-95 - Theory	123	100.00	3.14	
77	Clinical	123	100.00	3.26	
78	Age	121	98.37	23.19	
79	Virginia Resident	61	49.59		
80	Non-Virginia Resident	62	50.41		
81	Single	99	80.49		
82	Married	20	16.26		
83	Widowed/Separated/Divorces	4	3.25		
84	Number of Children	6	4.88	1.33	
85	Number of Children in Your Family	123	100.00	3.15	
86	Sibling Rank in Your Family: Oldest	51	41.46		
87	Middle	14	11.38		
88	Youngest	24	19.51		
89	Only	11	8.94		
90	Other	23	18.70		
91	Mother's Occupation*	122	99.19	4.80	
92	Mother's Education Level in Number of Years	122	99.19	12.93	
93	Father's Occupation*	117	95.12	8.92	
94	Father's Education Level in Number of Years	117	95.12	13.23	
	*Where occupation codes are:				
	1 = Housewife				
	2 = Workman				
	3 = Service Worker				
	4 = Skilled Laborer				
	5 = Skilled Craftsman or Foreman				
	6 = Salesman or Agent				
	7 = Office Worker				
	8 = Farm Owner or Farm Manager				
	9 = Owner of Business				
95	Father's Income Last Year (1969-70)**	84	68.29	2.90	
96	Mother's Income Last Year**	53	43.09	1.51	
97	Total Income**	58	47.15	3.09	
98	Household Income Last Two Yrs. in High School	101	82.11	2.63	
	**Where:				
	1 = Less than $ 5,000				
	2 = $5,100 to $10,000				
	3 = $10,000 to $15,000				
	4 = $15,100 to $25,000				
99	Social Background	123	100.00	5.22	
	Where: 4 = Middle-Lower				
	5 = Middle-Middle				
	6 = Middle-Upper				

TABLE 4 (continued)

Variable Number	Variable Description	N	Pct.	Mean Non-Zero	Rank Order
	Childhood Community				
100	Farm	12	9.76		
101	Village (less than 2,500)	11	8.94		
102	Small Town (10,000)	33	26.83		
103	Large Town (50,000)	13	10.57		
104	City (Over 50,000)	25	20.33		
105	Inner City	1	0.81		
106	Suburb	28	22.76		
107	House of Childhood	122	99.19	3.20	
	Where: 2 = Very Good House				
	3 = Good House				
	4 = Average House				
108	Ownership of Car - Yes	92	74.80		
109	- No	31	25.20		
110	- Joint	0	0.00		
	Source of Expenses-prior to U.Va.:		1.63		
111	Own Earnings	20	16.26		
112	Scholarships	17	13.82		
113	Contributions-other than parents	2	1.63		
114	Contributions From Parents	76	61.79		
115	Other	2	1.63		
	Source of Expenses at U.Va.:				
116	Own Earnings	8	6.50		
117	Scholarships	45	36.59		
118	Contributions-other than parents	3	2.44		
119	Contributions From Parents	57	46.34		
120	Other	5	4.07		
121	U.Va. Scholarship Holder: Yes	52	42.28		
122	No	71	57.72		
123	Religious Preference: Father-Protestant	104	84.55		
124	Catholic	14	11.38		
125	Jewish	0	0.00		
126	No Preference	2	1.63		
127	Other	2	1.63		
128	Religious Preference: Mother-Protestant	101	82.11		
129	Catholic	20	16.26		
130	Jewish	0	0.00		
131	No Preference	0	0.00		
132	Other	1	0.81		
133	Religious Preference: Self- Protestant	93	75.61		
134	Catholic	20	16.26		
135	Jewish	0	0.00		
136	No Preference	7	5.69		
137	Other	3	2.44		
	Leisure Time Rankings: 1 (high) - 20 (low)				
138	Photography	121	98.37	13.83	17
139	Socialization	121	98.37	5.40	1
140	Handicrafts	121	98.37	14.08	18

TABLE 4 (continued)

Variable Number	Variable Description	N	Pct.	Mean Non-Zero	Rank Order
	Leisure Time Rankings: 1 (high) - 20 (low)				
141	Collecting	121	98.37	16.67	20
142	Gardening	121	98.37	13.67	16
143	Music	121	98.37	7.47	4
144	Art	121	98.37	12.06	13
145	Woodworking	121	98.37	16.29	19
146	Cooking	121	98.37	7.31	3
147	Games	121	98.37	12.43	14
148	Sports-Participation	121	98.37	7.76	5
149	Sports-Spectator	121	98.37	8.28	8
150	Sewing	121	98.37	8.01	6
151	Reading	121	98.37	6.46	2
152	Writing	121	98.37	13.18	15
153	Going to Movies	121	98.37	8.13	7
154	Animals and Pets	121	98.37	10.44	12
155	Decorating	121	98.37	10.27	11
156	Dancing	121	98.37	8.88	9
157	Theatre	121	98.37	9.97	10
158	Hobbies of Greatest Appeal - Photography	13	10.57		
159	Cooking	88	71.54		
160	Woodworking	5	4.07		
161	Gardening	16	13.01		
162	Hobbies Enjoy Doing Most - Sports-Participate	63	51.22		
163	Knitting	11	8.94		
164	Reading	46	37.40		
165	Stamp Collecting	0	0.00		
166	Activities Enjoy Doing Best-Movie Watching	47	38.21		
167	Going to a Play	56	45.53		
168	Listening to a Concert	16	13.01		
169	Reader's Digest	63	51.22		
170	Activities Enjoy Least- Sewing Button Shirt	41	33.33		
171	Playing Chess	41	33.33		
172	Working in Garden	17	13.82		
173	Playing Golf	23	18.70		
174	Activities Enjoy Doing Most-Swimming	88	71.54		
175	Cooking exotic dishes	25	20.33		
176	Reading short story	9	7.32		
177	Tuning Engineof Car	0	0.00		
178	Hobbies Appeal to You Least-Handicrafts	59	47.97		
179	Sewing	22	17.89		
180	Music	26	21.14		
181	Decorating	14	11.38		
	Type of Reading in Spare Time: Professional Journals				
182	American Journal Nursing	108	87.80		
183	Nursing Outlook	21	17.07		

TABLE 4 (continued)

Variable Number	Variable Description	N	Pct.	Mean Non-Zero	Rank Order
	Type of Reading in Spare Time: (cont'd)				
	Professional Journals				
184	Nursing Research	7	5.69		
185	Nursing Forum	0	0.00		
186	R.N.	67	54.47		
187	Specially Nursing Journal	17	13.82		
188	Other	11	8.94		
379	Medical Journal	20	16.26		
380	Science	6	4.88		
381	Scientific American	11	8.94		
382	Education Journals	7	5.69		
383	Sociology Journals	8	6.50		
384	Psychology Journals	18	14.63		
385	Other	1	0.81		
	Non-Professional Journals				
189	Life, Look, etc.	89	72.36		
190	Time, Newsweek, etc.	104	84.55		
191	National Geographic	40	32.52		
192	Fortune, Holiday, etc.	6	4.88		
193	Mademoiselle, Vogue, etc.	60	48.78		
194	Popular Science, Mechanics	2	1.63		
195	Harpers Saturday Review	15	12.20		
196	New Yorker, Washingtonian	16	13.01		
197	Comics	29	23.58		
198	Good Housekeeping	54	43.90		
199	Ladies Home Journal	49	39.84		
200	Better Homes and Gardens	44	35.77		
201	Hobby Magazine	2	1.63		
202	Reader's Digest	57	46.34		
203	Esquire, Playboy	34	27.64		
204	Other	17	13.82		
	Books - Fiction				
205	Historical Novels	63	51.22		
206	Adventure	43	34.96		
207	Mystery	53	43.09		
208	Contemporary Novels	94	76.42		
209	Classics	67	54.47		
210	Western	6	4.88		
211	Science Fiction	18	14.63		
	Books - Non-Fiction				
212	Historical	63	51.22		
213	Economic	7	5.69		
214	Political	36	29.27		
215	Geographic	5	4.07		
216	Science	37	30.08		
217	Biography, Autobiography	77	62.60		
218	Poetry	71	57.72		

TABLE 4 (continued)

Variable Number	Variable Description	N	Pct.	Mean Non-Zero	Rank Order
	Books - Professional				
219	Nursing, General	66	53.66		
220	Nursing, Clinical Speciality	59	47.97		
221	Psychological	51	41.46		
222	Sociological	31	25.20		
223	Medical	48	39.02		
224	Biological	17	13.82		
225	Research Reports	11	8.94		
226	Natural Sciences	4	3.25		
227	Research Methods	2	1.63		
228	Education	24	19.51		
229	Microbiological	3	2.44		
230	Anthropological	18	14.63		
231	Administration	6	4.88		
232	Number of Books Read per Month - Profess.	121	98.37	1.70	
233	Fiction	119	96.75	1.82	
234	Non Fic.	121	98.37	1.52	
235	Number of Books in Parents' Home	121	98.37	2.73	
	Where: 1 = 0 to 100 2 = 101 to 200 3 = 201 to 500				
	Interest in Newspaper Ranking: 1(high) to 7(low)				
236	Sports	122	99.19	4.60	5
237	Comics	122	99.19	3.48	4
238	Fashion or Society	122	99.19	2.99	2
239	Editorial	122	99.19	3.25	3
240	Front Page News	122	99.19	1.50	1
241	Financial	122	99.19	5.55	6
242	Other	122	99.19	6.61	7
	Interest in TV Programs-Ranking 1(high) to 8(low)				
243	Westerns	120	97.56	5.68	7
244	News Broadcast and Commentaries	120	97.56	3.28	2
245	Documentaries	120	97.56	3.76	5
246	Serials	120	97.56	5.52	6
247	Dramas	120	97.56	3.08	1
248	Variety Shows	120	97.56	3.53	3
249	Comedies	120	97.56	3.72	4
250	Other	120	97.56	7.41	8
251	High School Program: Commercial/Business	4	3.25		
252	College Prep.	112	91.06		
253	General	11	8.94		
254	Vocational	1	0.81		
255	Other	1	0.81		
	Subject-Interest Rankings- 1(high) to 4(low)				
256	Chemistry	123	100.00	3.02	4
257	History of Nursing	123	100.00	2.76	3
258	Microbiology	123	100.00	2.14	2
259	Art	123	100.00	2.09	1

TABLE 4 (continued)

Var.Number	Variable Description	N	Pct.	Mean Non-Zero	Rank Order
260	Histology	122	99.19	2.42	2
261	Architecture	122	99.19	2.58	3
262	Philosophy	122	99.19	1.92	1
263	Chemistry	122	99.19	3.08	4
264	Political Science	123	100.00	2.35	3
265	Foreign Language	123	100.00	2.33	2
266	Physics	123	100.00	3.57	4
267	Physiology	123	100.00	1.75	1
268	English Literature	123	100.00	2.12	1
269	Sociology	123	100.00	2.26	2
270	Anatomy	123	100.00	2.28	3
271	Algebra	123	100.00	3.34	4
272	Geometry	123	100.00	3.00	4
273	Music	123	100.00	2.03	1
274	Journalism	123	100.00	2.75	3
275	Communicable Diseases	123	100.00	2.22	2
276	Greek Civilization	123	100.00	2.25	2
277	Cell Physiology	123	100.00	2.31	3
278	Religion	123	100.00	2.23	1
279	Algebra	123	100.00	3.21	4
280	Economics	123	100.00	2.96	3
281	Shorthand	123	100.00	3.47	4
282	Psychology	123	100.00	1.27	1
283	Pharmacology	123	100.00	2.31	2
284	Nutrition	123	100.00	2.43	3
285	Anthropology	123	100.00	2.06	1
286	Dramatic Arts	123	100.00	2.15	2
287	Commerce	123	100.00	3.37	4
288	Familiarity with Foreign Language - Yes	95	77.24		
289	No	27	21.95		
290	Speaking Knowledge	5	4.07		
291	Reading Knowledge	46	37.40		
292	Both	42	34.15		
293	Travelled Abroad - not at all	85	69.11		
294	with parents/relatives	18	14.63		
295	with friends	18	14.63		
296	alone	6	4.88		
297	other	1	0.81		
298	Approximate size of High School Graduating Class	122	99.19	289.75	
299	Approximate Academic Standing in High School Graduating Class	123	100.00	3.30	

Where: 2 = top 50%
3 = top 25%
4 = top 10%

TABLE 4 (continued)

Var. Number	Variable Description	N	Pct.	Mean Non-Zero	Rank Order
300	Study for Long Unbroken Periods - Yes	56	45.53		
301	No	67	54.47		
302	Prefer Long Unbroken Study Periods - Yes	49	39.84		
303	No	72	58.54		
304	Time of Study Preference	123	100.00	4.11	
	When: 1 = Before 6:00 a.m. 2 = 6:00 a.m. to 9:00 a.m. 3 = 1:00 p.m. to 4:00 p.m. 4 = 6:00 p.m. to 9:00 p.m. 5 = 10:00 p.m. to 1:00 a.m. 6 = After 1:00 a.m.				
305	Number of Credits Carried 3rd Year/Fall	110	89.43	14.64	
306	/Spring	109	88.62	14.51	
307	/Summer	54	43.81	5.30	
308	4th Year/Fall	112	91.06	14.66	
309	/Spring	111	90.24	14.04	
310	/Summer	7	5.69	5.86	
	School Attended First Two Years				
311	Mary Washington	25	20.33		
312	Madison College	18	14.63		
313	Longwood	14	11.38		
314	Averett	7	5.69		
315	Virginia Intermont College	6	4.88		
316	Radford College	3	2.44		
317	Eastern Mennonite College	2	1.63		
318	Ferrum Junior College	4	3.25		
319	Richmond Professional Institute	0	0.00		
320	Lynchburg College	2	1.63		
321	University of Maryland	3	2.44		
322	Emory and Henry	0	0.00		
323	Mars Hill College	1	0.81		
324	All Others	36	29.27		
325	Selectivity of Transfer College or School	106	86.18	2.16	
	Where: 1 = Nearly all applicants accepted 2 = Less than 75% of applicants accepted 3 = Less than 50% of applicants accepted 4 = Less than 25% of applicants accepted 5 = Less than 10% of applicants accepted				
326	Academic Standing at Time of Transfer to University of Virginia	109	88.62	2.66	
	Where: 1 = Lower 50% 2 = Top 50% 3 = Top 25%				
327	Confidence in Academic Success in Nursing	123	100.00	3.37	
	Where: 1 = Not at all 2 = Only to a very limited degree 3 = To some degree 4 = To a substantial degree				
	Plans After Graduation				
328	Practice nursing in hospital setting	87	70.73		
329	Attend graduate school	23	18.70		
330	Teach in hospital or college nursing school	8	6.50		

TABLE 4 (continued)

Var. Number	Variable Description	N	Pct.	Mean Non-Zero	Rank Order
331	Marry and not work	3	2.44		
332	Enter military service	9	7.32		
333	Other	25	20.33		
334	Time First Considered Nursing as Career	122	99.19	2.10	
	Where: 1 = Before 7th Grade				
	2 = Before 10th Grade				
	3 = Before 12th Grade				
	Extent Following Helped Make Decision of Nursing*				
335	Parent or other relative	114	92.84	1.96	
336	High school teachers	112	91.06	2.79	
337	High school counselors	112	91.06	2.63	
338	High school principal	107	87.00	2.88	
339	Students in nursing school	110	89.43	2.61	
340	Professional nurses	103	83.74	2.60	
341	Classmates of friends	114	92.82	2.53	
342	Other adults	113	91.87	2.28	
	Extent Following Helped Decide about UVA*				
343	Parents wanted	121	98.37	2.22	
344	Parents/Relative/Close friend attended UVA	116	94.31	2.41	
345	Reputation of faculty	116	94.31	2.59	
346	Friendly social climate	118	95.93	2.51	
347	Emphasis on religion	115	94.31	2.99	
348	Low cost	118	95.93	2.45	
349	Good athletic programs	116	94.31	2.96	
350	Coeducational	116	94.31	2.41	
351	Close to home	121	98.37	2.35	
352	Wanted to live away from home	118	95.93	2.26	
353	Friends going to or will attend UVA	116	94.31	2.68	
354	Offers financial assistance	117	95.12	2.60	
355	Good intellectual atmosphere	119	96.75	2.05	
356	Not too much academic competition	116	94.31	2.92	
357	Located in cosmopolitan area	112	91.06	2.72	
358	Offers 4 year nursing program	116	94.31	1.44	
359	Others	29	23.58	1.23	
	*Where: 1 = very much				
	2 = some				
	3 = very little or none				
360	Parents Attitude Toward You Attending College	119	96.75	1.32	
	Where: 1 = Strongly favorable				
	2 = favorable				
	3 = indifferent				
	Semantic Differential Rating "Nursing Practice"				
	Ratings: 1 to 6				
361	Servant-Master	119	96.75	3.31	
362	Dull-Exciting	120	97.56	4.53	
363	Permanence-Change	121	98.37	4.08	
364	Laxity-Authority	118	95.93	3.95	
365	Inept-Skilled	120	97.56	5.02	
366	Depressing-Stimulating	120	97.56	4.43	
367	Non-Professional - Professional	120	97.56	4.83	
368	Ambiguous - Specific	119	86.75	3.72	
369	Dependent-Independent	121	98.37	3.87	
370	Diffuse-Concise	121	97.56	3.42	

TABLE 4 (continued)

Variable Number	Variable Description	N	Pct.	Mean Non-Zero	Rank Order
371	Lethargy-Ambition	120	97.56	4.53	
372	Unproductive-Productive	120	97.56	4.84	
373	Failure-Success	121	98.37	4.57	
374	Reflective-Impulsive	118	95.93	2.72	
375	Impersonal-Personal	120	97.56	4.83	
376	Restricting-Comprehensive	119	96.75	4.11	
377	Mundane-Ethereal	117	95.12	3.62	
378	Uncommitted-Committed	117	95.12	4.36	
	Number in Sample	123			